

SAP CLOUD PLATFORM | EXTERNAL

# Setup Guide

## Manage Invoices without Purchase Order

# Table of Contents

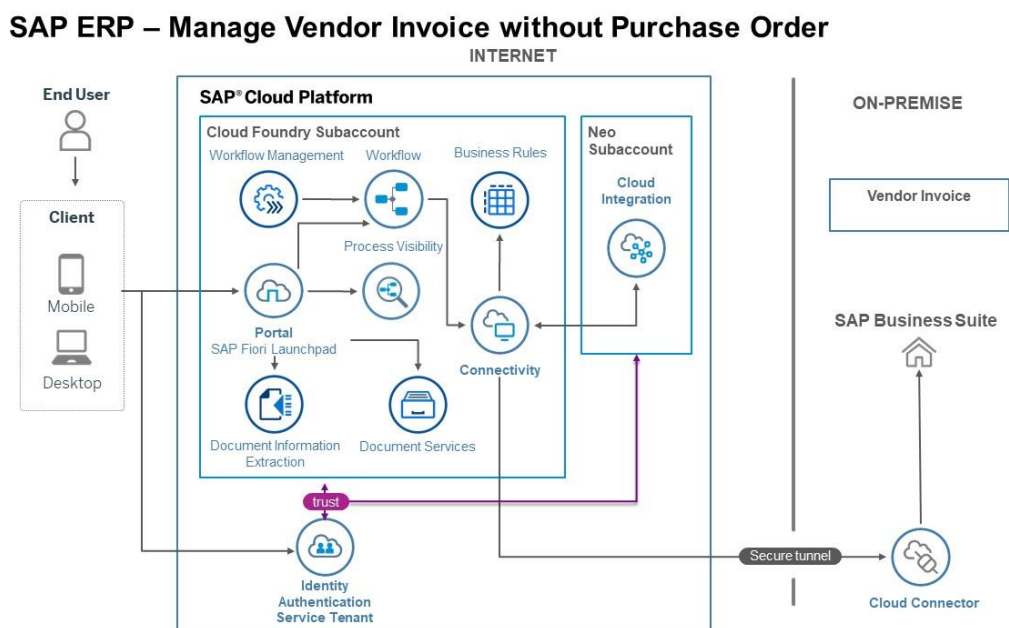
|  |    |
|--|----|
| Table of Contents.....   | 2  |
| Overview.....  | 3  |
| Required SAP Cloud Platform Services .....   | 5  |
| Setup and Configuration.....   | 6  |
| Configure SAP Cloud Platform Workflow Management .....                                   | 6  |
| Configure Workflow Email Destination .....   | 6  |
| Configure Workflow Destination .....   | 6  |
| Configure Business Rules Destination .....   | 6  |
| Configure Document Management Service Repository .....                                   | 7  |
| Configure Document Management Destination .....  | 7  |
| Configure Document Information Extraction [Optional] .....                               | 8  |
| Configure Integration Destination.....   | 8  |
| Configure SAP ERP Destination .....  | 10 |
| Configure Cloud Connector.....   | 12 |
| Import, Configure and Deploy Integration Content.....                                    | 13 |
| Import Prepackaged Integration content using SAP <b>Cloud Platform integration</b> ..... | 13 |
| Deploy User Interface and Workflow .....   | 14 |

# Overview

This document provides information about configuration steps to consume the Live Process Package **Manage Invoice without Purchase Order**. The main audience of this document are technical IT Administrators and Developers.

This content package enables SAP ERP customers to automate Manage Non-PO Vendor Invoice process using SAP Cloud Platform Workflow Management without additional development in SAP ERP. Salient features of this content package are

- Plug and Play with SAP ERP without additional development.
- Net new process variants can be configured in a low-code no-code approach.
- Agent determination achieved in any of the following ways - using Business Rules, or SAP ERP, or external systems.
- Validate Line item attributes using Business Rules.
- Achieve process visibility with key process performance indicators out-of-the-box.
- Determine which process variant to trigger and whom to assign the approval tasks using Business Rules
- Pre-built integration content to call the RFC in SAP ERP from SAP Cloud Platform Workflow Management.
- Line Item data validated using Business Rules before approval.
- Approvers are determined using a Business Rule / external system.
- Processor and approvers are notified via email.
- Approvers have two decision options (Approve, Reject), and based on the decision, the next approval step will be created or terminate the approval process.
- Vendor Invoice will be updated in SAP ERP.



**Manage Invoice without Purchase Order** application helps customer to post Invoice data into ERP, and check and display an existing invoice. For creation and change of the invoice, customers can enable approval process before updating in SAP ERP. The application provides flexibility in choosing process variants depending on attributes like *Post Invoice*, *Check Invoice*, *Plant*, *Tax Calculation* etc. When a Non-PO vendor invoice is created or changed in the application, pre-configured Process Variants are triggered in SAP Cloud Platform Workflow Management.

Account executive/Invoice processor, Approvers, Procurement Team are the target users of the user interfaces explained in this document

## Required SAP Cloud Platform Services

The following SAP Cloud Platform services are required to consume the content package Manage Invoice without Purchase Order:

- SAP Cloud Platform Workflow management
- SAP Cloud Platform Integration (in SAP Cloud Platform Neo landscape)
- SAP Cloud Platform Portal
- SAP Cloud Platform Document Management
- SAP Cloud Platform Document Information Extraction (optional)
- SAP Cloud Platform Identity Authentication Service
- SAP ERP 6.0 (ECC)

# Setup and Configuration

## Configure SAP Cloud Platform Workflow Management

Manage Non-PO Vendor Invoice content package requires SAP Cloud Platform Workflow Management subscription or a CPEA contract. Follow the setup and configuration section of SAP Workflow Management.

<https://help.sap.com/viewer/6f55baaf330443bd8132d071581bbae6/Cloud/en-US/d7910e2bf7f64afc9d0eb21b0cc9e84d.html>

## Configure Workflow Email Destination

Configure workflow email destination. For more information on configuring destination, see [configure workflow email destination](#).

## Configure Workflow Destination

To start the item process variant, you need to maintain a destination for the Workflow with the following parameters:

|                   |  |
|-------------------|--|
| Name              | Workflow   |
| Type              | HTTP   |
| Proxy Type        | Internet   |
| Authentication    | OAuth2ClientCredentials  |
| URL               | https://api.workflow.<region-host>.hana.ondemand.com/workflow-service/rest |
| Client ID         | <ClientID>   |
| Client Secret     | <clientSecret>   |
| Token Service URL | <uaa.url>/oauth/token  |

Please refer help documentation [how to get URL, ClientID, Client Secret and Token Service URL](#). For more information refer to [how to create a HTTP destination](#) and [how to use Workflow APIs](#).

## Configure Business Rules Destination

An HTTP destination is required in the Cloud Foundry account where SAP Workflow Management is subscribed. Configure destination with details as shown below. Please make sure the URL formatted as {rule\_runtime\_url}/rules-service. Please refer how to [create a HTTP destination](#) and [how to access business rules APIs](#) using OAuth 2.0 Authentication (client credentials)

|      |               |
|------|---------------|
| Name | BusinessRules |
|------|---------------|

|                   |                                  |
|-------------------|----------------------------------|
| Type              | HTTP                             |
| Proxy Type        | Internet                         |
| Authentication    | OAuth2ClientCredentials          |
| URL               | <rule_runtime_url>/rules-service |
| Client ID         |                                  |
| Client Secret     |                                  |
| Token Service URL | <uaa.url>/oauth/token            |

Please refer help documentation [how to get URL, Client ID, Client Secret and Token Service URL](#). For more information refer to [how to create a HTTP destination](#) and [how to access business rules APIs using OAuth 2.0 Authentication \(client credentials\)](#).

## Configure Document Management Service Repository

SAP Cloud Platform Document Management, in short Document Management, is the content management solution on the Cloud Foundry environment of SAP Cloud Platform. For the Non-PO Vendor Invoice live process package, you need to subscribe to ‘Document Management, integration option’ in order to upload the invoice and other supporting documents for the approval process.

Create and configure root Document Management Service repository by following the steps described in [Initial Setup for Document Management, Integration Option](#) and [Connect to Document Management, Repository Option Using API \(incl. Prerequisites\)](#).

Save generated Repository ID from the response to be used the destination configuration as described in the next section.

## Configure Document Management Destination

Configure a Document Management Service destination with the following parameters.

|                   |  |
|-------------------|--|
| Name              | bpmworkflowruntime_attachments                           |
| Type              | HTTP   |
| Proxy Type        | Internet   |
| Authentication    | OAuth2ClientCredentials                                  |
| URL               | <endpoints.ecmservice.url>/browser/<Repository_ID>/root/ |
| Client ID         |  |
| Client Secret     |  |
| Token Service URL | <uaa.url>/oauth/token                                    |

Populate Client ID and Client Secret with the values from the Service Key created on the previous step (see [Create Service Keys Using the Cockpit](#)).

To make sure that the users can upload and view the document, assign the roles “SDM\_Admin” or “SDM\_User” to the users.

## Configure Document Information Extraction [Optional]

[SAP Cloud Platform Document Information Extraction](#) in cloud foundry environment helps you to automate the extraction of relevant information from the incoming invoices using OCR and machine learning capabilities. Once the machine learning model is enriched to identify your vendor and employee, it can automatically match the invoice to the enriched data.

**Note:** that this is an optional service for the live process package.

|                   |  |
|-------------------|--|
| Name              | DocumentInfoExtraction                                   |
| Type              | HTTP   |
| Proxy Type        | Internet   |
| Authentication    | OAuth2ClientCredentials                                  |
| URL               | <endpoints.ecmservice.url>/browser/<Repository_ID>/root/ |
| Client ID         |  |
| Client Secret     |  |
| Token Service URL | <uaa.url>/oauth/token                                    |

**Note:** The following role collection - **Document\_Information\_Extraction\_UI\_End\_User** is required to access the Document Information Extraction UI. For more information please refer to the following help guide - [User Guide for Document Information Extraction UI](#)

## Configure Integration Destination

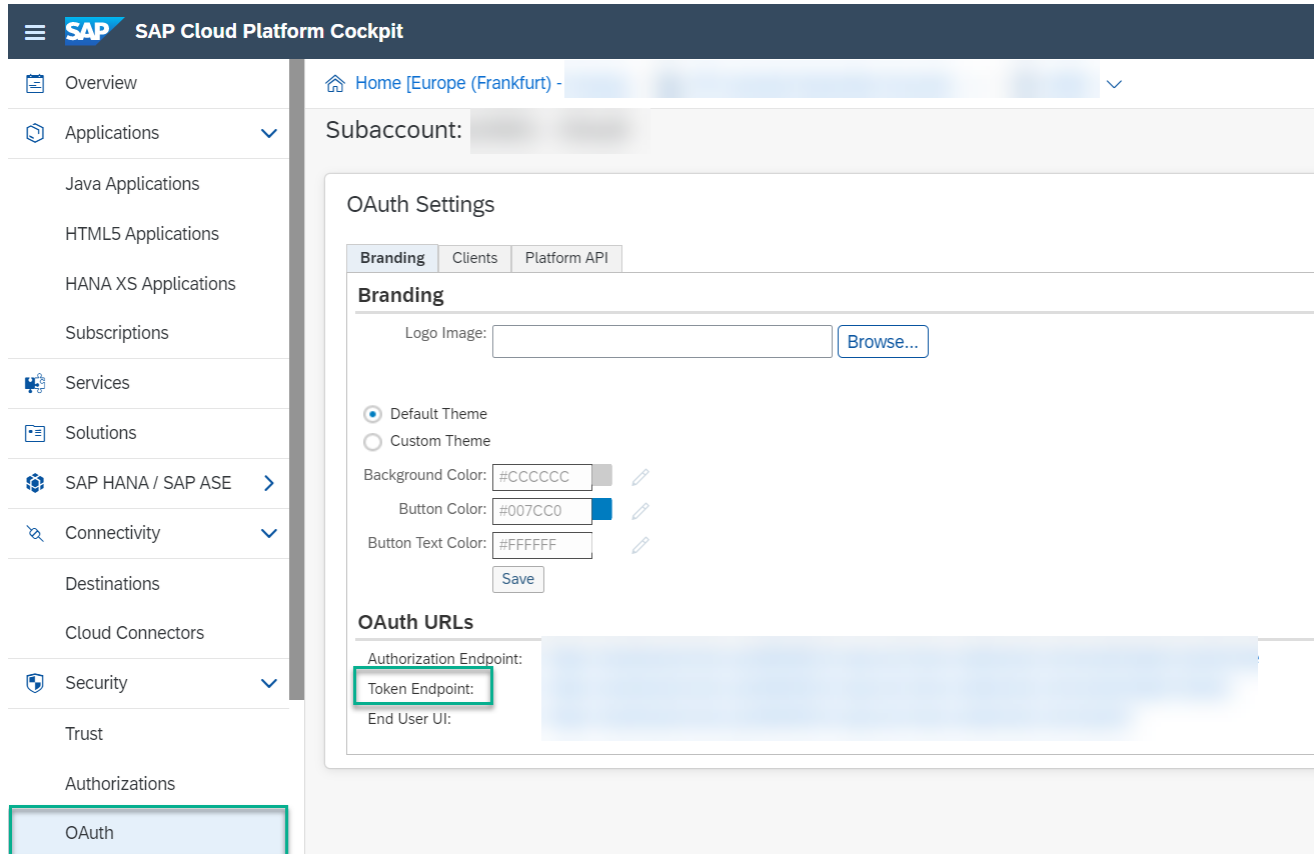
A HTTP destination is required in the Cloud Foundry account where SAP Cloud Platform Workflow Management is subscribed.

|                                  |  |
|----------------------------------|--|
| Name                             | CPI  |
| Type                             | HTTP   |
| Proxy Type                       | Internet   |
| Authentication                   | Basic Authentication <b>OR</b> OAuth2ClientCredentials |
| URL                              | <runtime.url>  |
| Username <b>OR</b> Client ID     |  |
| Password <b>OR</b> Client Secret |  |
| Token Service URL                | <oauth.url.for.clientCredentials>                      |



Refer to this link [how to get your Cloud Platform Integration tenant runtime url](#).

If you would like to use OAuthClientCredentials flow, then create an OAuth client in Cloud Platform Integration Neo tenant and enter Client ID and Client Secret. Token Service Url is available in your Cloud Platform Integration Neo account as showed below.



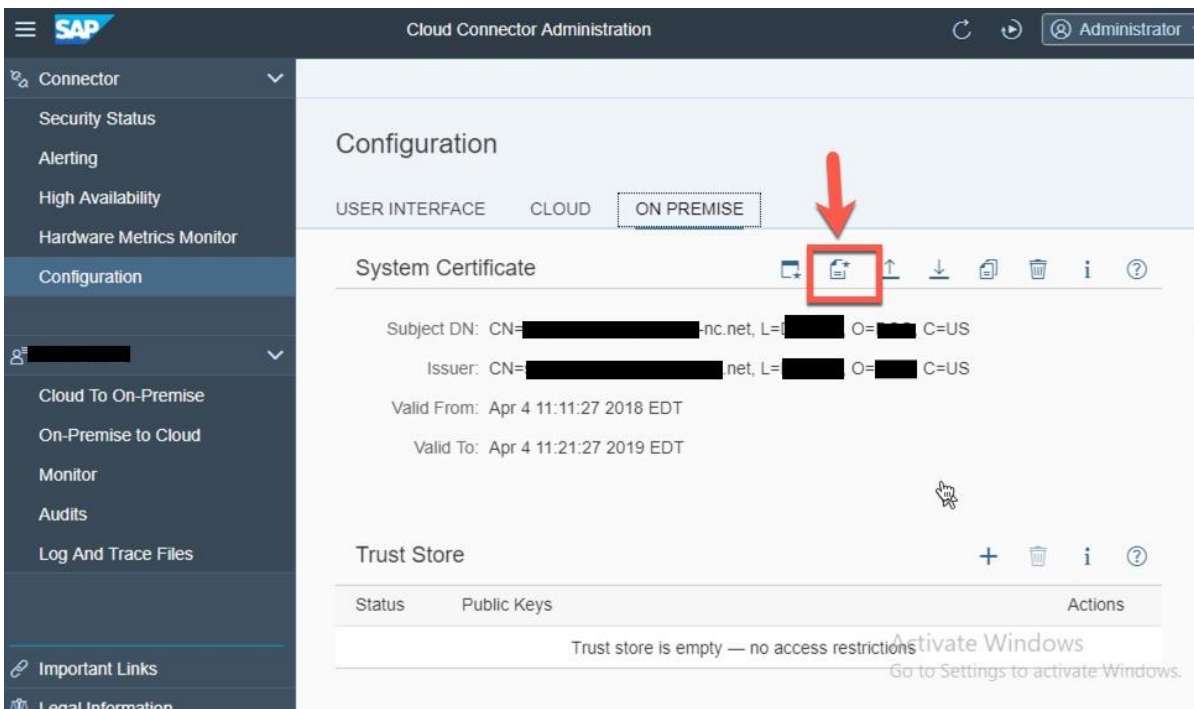
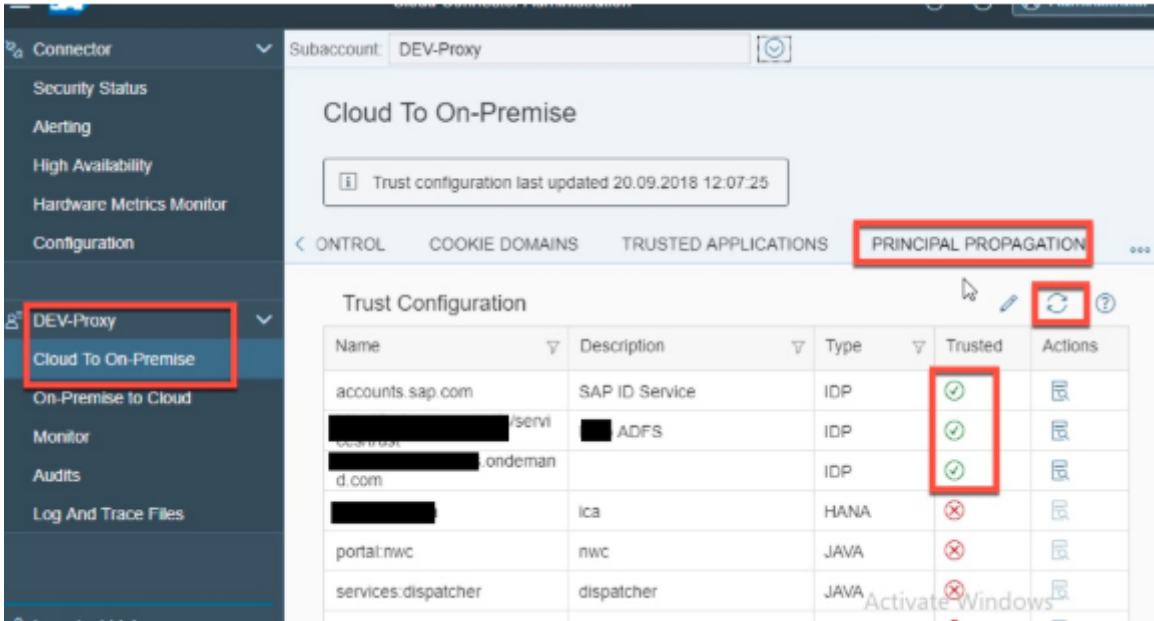
Assign the required [Cloud Platform Integration roles](#) to your OAuth client (oauth\_client\_<client ID>).

## Configure SAP ERP Destination

Create an RFC destination with the following properties in the Neo account where SAP Cloud Platform Integration is subscribed. Please refer how to [create a RFC destination in SAP Cloud Platform](#).

|                     |  |
|---------------------|--|
| Name                | <ANYNAME><br><b>Note:</b> You can name it as you wish, but maintain the destination name in the integration flow configuration.                                |
| Type                | RFC  |
| Proxy Type          | OnPremise  |
| User                | <ECCUSER>  |
| Password            |  |
| Repository User     |  |
| Repository Password |  |
| Location ID         | <uaa.url>/oauth/token  |
| Additional Property | Name: jco.client.ashost<br>Value: <abapServerHost><br><br>Name: jco.client.client<br>Value: <client id><br><br>Name: jco.client.sysnr<br>Value: <systemNumber> |

For implementing Principal propagation customer needs to synchronize the IDP in SAP cloud connector, create the destination of type IDP and import the self-signed CA certificates.



Follow these steps in the SAP ERP (ECC) to enable Principal propagation

1. Import Cloud Connector (SCC) System certificate in STRUSTSSO2 transaction under SSL Server Standard. This established the trust between the backend and SCC
2. Maintain subject, issuer, cert rule parameter details in default profile – RZ10 transaction
3. Create the rule-based mapping using sample X.509 certificate – CERTRULE transaction
4. Restart ICM

## Configure Cloud Connector

Configure your SAP Cloud Platform Integration account and ERP system in Cloud Connector to enable secure tunnel for RFC calls. Please refer the help documentation to [configure Cloud Connector](#).

Customer needs to expose the Following BAPI's in cloud connector to be able to access the function modules

- BAPI\_GL\_ACC\_GETLIST
- BAPI\_COMPANYCODE\_GETLIST
- MMPUR\_UI\_GET\_SUPPLIERS
- BAPI\_BUSINESSAREA\_GETLIST
- BAPI\_PROFITCENTER\_GETLIST
- BAPI\_COSTCENTER\_GETLIST
- /SAPNEA/SMAPI\_PLANT\_GETLIST
- RFC\_READ\_TABLE
- BPAR\_C\_FI\_TERM\_OF\_PAYMENT\_KEY
- BAPI\_CONTROLLINGAREA\_FIND
- FI\_TAX\_SERVICES\_CALCULATE
- BAPI\_ACC\_DOCUMENT\_POST
- BAPI\_ACC\_DOCUMENT\_CHECK
- BAPI\_VENDOR\_GETDETAIL
- BAPI\_COMPANYCODE\_GETDETAIL
- BAPI\_USER\_GETLIST
- BAPI\_EXCHRATE\_GETCURRENTRATES

# Import, Configure and Deploy Integration Content

This live process content package requires **SAP Cloud Platform Integration in Neo Platform** to create, modify and release Non-PO Vendor Invoice line items. An integration content package **SAP Cloud Platform Workflow Management Integration with SAP ERP – Invoice** is available in SAP API Business hub to integrate SAP Cloud Platform Workflow Management with SAP ERP. The following Integration models are available in this package. All integration models are using RFC Adapter to call the required APIs in SAP ERP.

The screenshot shows the SAP Cloud Platform Integration interface. The top navigation bar includes the SAP logo, the text 'SAP Cloud Platform Integration', and 'Integration Advisor'. Below the navigation bar, the breadcrumb path is 'Design / SAP Cloud Platform Workflow Management Integration with SAP ERP – Invoice / SAP Cloud Platform Workflow Management Integration with SAP ERP – Invoice'. The main content area has tabs for 'Header', 'Overview', 'Artifacts (23)', 'Documents', 'Comments', and 'Tags'. The 'Artifacts (23)' tab is active, displaying a table of artifacts. The table has columns for 'Name', 'Type', 'Version', and 'Actions'. Each row represents an integration flow artifact, such as 'Check Invoice from SAP ERP', 'Get BSIK from SAP ERP', 'Get Business Area Info from SAP ERP', and 'Get Company Code from SAP ERP'. Each artifact is marked as 'Unmodified' and has a version of '1.0'. The 'Actions' column for each artifact contains a copy icon and a right-pointing arrow.

| <input type="checkbox"/> | Name   | Type             | Version | Actions |
|--------------------------|--|------------------|---------|---------|
| <input type="checkbox"/> | <b>Check Invoice from SAP ERP</b><br>Invoice status check in SAP ERP<br>Unmodified                                 | Integration Flow | 1.0     |         |
| <input type="checkbox"/> | <b>Get BSIK from SAP ERP</b><br>Search help for BSIK from SAP ERP<br>Unmodified                                    | Integration Flow | 1.0     |         |
| <input type="checkbox"/> | <b>Get Business Area Info from SAP ERP</b><br>Search help for business area Information from SAP ERP<br>Unmodified | Integration Flow | 1.0     |         |
| <input type="checkbox"/> | <b>Get Company Code from SAP ERP</b><br>Search help for company code from SAP ERP<br>Unmodified                    | Integration Flow | 1.0     |         |

Import the Content package to your SAP Cloud Platform Integration tenant.

To be able to import and deploy integration flows, you need the **AuthGroup.IntegrationDeveloper** role assigned in your tenant.

## Import Prepackaged Integration content using SAP Cloud Platform integration

- Access your SAP Cloud Platform Integration Tenant management node. Please refer [help documentation](#) on how to get Tenant management node address. <https://<cpitenant>.hana.ondemand.com/itspaces>
- View all pre-packaged integration flow under Discover->Integration. <https://<cpitenant>.hana.ondemand.com/itspaces/shell/discover>
- Search content package '**SAP Cloud Platform Workflow Management Integration with SAP ERP – Invoice**'
- Click on the package SAP Cloud Platform Workflow Management Integration with SAP ERP – Invoice
- Click **Copy** to import the Integration content package to your workspace.

- Navigate to Design to open the imported content package.  
<https://<cpitenant>.hana.ondemand.com/itspaces/shell/design>
- For each Integration models, select Externalized Parameters, set configured value as RFC Destination created in the section **Configure SAP ERP Destination**

Configure "Post Invoice from SAP ERP"

The screenshot shows a configuration interface for an integration model. The title is "Configure 'Post Invoice from SAP ERP'". There is a tab labeled "Receiver" which is currently selected. Below this, under a section labeled "Connection", there are four configuration items:
 

- "Receiver": A dropdown menu with "SAPERP" selected.
- "Adapter Type": A dropdown menu with "RFC" selected.
- "Destination": A text input field containing the value "ECC".
- "Send Confirm Transaction": A checkbox that is checked.

- Deploy the integration model

These Integration models are used from the Live Process content package **Manage Invoices without Purchase Order**.

## Deploy User Interface and Workflow

Import the project zip from SAP samples GitHub. Follow the readme.md file in the GitHub to deploy the custom SAPUI5 user interface for starting the approval process, approval & rework tasks

The **GitHub** link is as follows:

<https://github.com/SAP-samples/cloud-workflow-samples/tree/master/cf-manageinvoiceswithoutpo-lp>

Similarly, deploy the header workflow found in the above GitHub link.

The **Non-PO Vendor Invoice Header Process in git** – This header workflow provides a generic approval process for vendor invoice creation in SAP ERP with invoice validations. Validations of the invoice are done against SAP ERP and by using business rules.

The header workflow determines process variants depending on Cost Objects. An Invoice cost object is a combination of invoice's item fields, specifically, a combination of cost center, profit centre, business area and plant.

For vendor invoice creation one header workflow can call multiple process variants for approval process depending on invoice cost objects. If invoice validation fails or approval process is declined or mentioned as not responsible by approver, a rework task will be assigned to the initiator of the Invoice Posting.